Chapter Six: Current System Performance

INTRODUCTION

Stratification of the airports into functional roles within the Vermont Airport System, identified in Chapter Three, provides a baseline for evaluating the existing airport system. Performance measures, with specific benchmarks for each measure, are used to evaluate the system to determine its current performance. This evaluation provides an indication of where the current airport system is adequate to meet the State's near and long-term aviation needs, identifies specific airport or system deficiencies, and helps to establish surpluses or duplications within the system that can be addressed in the future. This evaluation provides the foundation for subsequent recommendations for the Vermont airport system, as well as for individual study airports.

Some benchmarks used to evaluate Vermont's aviation system are action-oriented, while others are more informational in nature. The three performance measures established to evaluate the system and considered in this chapter include the following:

- **Accessibility –** To provide a system of airports that is accessible from both the ground and the air

- **Development –** To provide an airport system that preserves and enhances existing infrastructure.

- **Safety & Security –** To promote a safe and secure system of airports

The following sections of this chapter use each of the previously established system performance measures and their associated benchmarks to evaluate Vermont's existing airport system. It should be noted that the analyses that are provided are based on conditions as of January 2006.

PERFORMANCE MEASURE: ACCESSIBILITY

For an airport system to adequately serve a state, it should provide convenient and reasonable access from both the ground and the air. The ability of any airport system to meet the Accessibility performance measure can be determined in several ways.

Ground accessibility can be measured by determining the coverage or ability to access provided by system airports to all geographic areas of the State, and by determining the percentages of the State's population that are within established drive times of all or various categories of system airports. System accessibility can also be determined by measuring the effective coverage provided by airports that provide certain types of facilities.

ArcGIS 9, a Geographic Information System (GIS), was used to determine the ground coverage of airports and their proximity to existing and potential users. The task included using these map-based systems to assign driving speeds to various roads and a mathematical process to calculate the distances that can be driven from the airports in a given time period. These calculations result in the development of an FAA standard 30-minute drive time or coverage shape for each airport in the Vermont Airport System Plan. FAA guidelines indicate that, as a general rule, general aviation airports should be located within 30 minutes of their users. When the 30-minute drive times for each airport are calculated and applied to mapping that includes data such as population, the ability of the Vermont's airport system to serve the State and its population can be determined. A 60-minute drive time was used to calculate coverage provided by airports located both in and outside of the State that support commercial air service.

Air accessibility is also an important factor in measuring system performance. Air accessibility is influenced by factors such as the airport's type of approach (precision, non-precision, or visual), and the presence, or lack thereof, of on-site weather-reporting equipment to support the ability of aircraft to land in all weather conditions.

Benchmarks that are used to evaluate the system's ability to provide adequate ground and air access are discussed below.

- Percent of Vermont's population and land area within 60 minutes of an airport with commercial service (Vermont and neighboring airports)
- Percent of Vermont's population and land area within 30 minutes of an airport with a 5,000-foot long runway
- Percent of Vermont's population and land area within 30 minutes of an airport with a 5,000-foot long runway having a precision approach
- Percent of population and land area coverage provided by airports in each of the functional roles

BENCHMARK: PERCENT OF VERMONT'S POPULATION AND LAND AREA WITHIN 60 MINUTES OF AN AIRPORT WITH COMMERCIAL SERVICE (VERMONT AND NEIGHBORING AIRPORTS)

It is important that commercial service airports provide adequate coverage to Vermont's population. GIS analysis depicted in **Exhibit 6-1** shows that 93 percent of Vermont's population is within a 60-minute drive time of an airport that supports commercial service. A majority of this coverage is provided by the only two airports in Vermont that support commercial air service, Burlington International and Rutland State. Out-of-state airports do provide duplicate coverage in many areas of Vermont, but it should be noted that the eastern half of Orange County and the southern half of Caledonia County are exclusively contained within the coverage provided by out-of-state commercial service airports. In addition, the southern tips of Windham and Bennington counties are also exclusively provided coverage by out-of-state commercial service airports, but no Vermont towns of significant population are located within these areas.

It should be noted that only a minimal amount of Vermont's population lies beyond a 60-minute drive time of a commercial service airport. Areas of Vermont that lie beyond the 60-minute drive time coverage include most of Orleans and Essex counties, and the northern half of Caledonia County, all of which are located in

northeast Vermont. This area of Vermont is sparsely populated, with only two towns, Newport and Lyndon, having a population greater than 5,000 people. Approximately 75 percent of the State's land area is contained within the 60-minute drive time coverage provided by these airports.

BENCHMARK: PERCENT OF VERMONT'S POPULATION AND LAND AREA WITHIN 30 MINUTES OF AN AIRPORT WITH A 5,000-FOOT LONG RUNWAY

Adequate runway facilities are one of the most important components of an aviation system. Measuring runway adequacy is more complicated than simply counting the number of airports and/or runways in the system. In many instances, runway adequacy is determined by the ability of individual runways to accommodate use by a specific type of operator or class of aircraft.

A planning "rule of thumb" indicates that corporate jet aircraft typically require 5,000 feet of paved runway length to regularly support their operations at an airport. The 5,000-foot runway length represents a composite runway length requirement that results from a number of different factors being examined, including operational characteristics of specific aircraft, aircraft operator preferences, and standard corporate aircraft insurance policies. **Exhibit 6-2** uses GIS to graphically depict the Vermont system airports with a paved runway measuring at least 5,000 feet in length and their corresponding 30-minute drive time coverage areas. Approximately 62 percent of Vermont's population is within a 30-minute drive time of an airport with a runway length of 5,000 feet or more. The coverage of land provided by these airports is nearly 38 percent, slightly more than one-third of the total land in Vermont.

The service provided by out-of-state airports that meet the 5,000-foot long runway and precision approach standard will be examined in a subsequent chapter.

BENCHMARK: PERCENT OF VERMONT'S POPULATION AND LAND AREA WITHIN 30 MINUTES OF AN AIRPORT WITH A 5,000-FOOT LONG RUNWAY HAVING A PRECISION APPROACH

Precision approach systems provide electronic longitudinal and glideslope information to aircraft during their approach and landing procedures. These systems allow aircraft to locate an airport and land on a specific runway during periods of poor visibility and/or inclement weather. Operators of the most demanding general aviation aircraft typically prefer to operate at airports with precision approaches. The reliability that these systems provide is important to commercial and business aircraft because it minimizes the periods of time that airports are closed because of poor visibility. Precision approach systems reduce delays related to airport closures,

rerouting of aircraft, and ground travel times associated with not being able to access the nearest airport.

The percentage of the State's population and land area within a 30-minute drive time of an airport with a 5,000-foot long runway having a precision approach was measured in this analysis using GIS. **Exhibit 6-3** summarizes the results of the precision approach analysis. As shown in Exhibit 6-3, approximately 21 percent of the State's land area is located within a 30-minute drive time of Burlington International or Edward F. Knapp State, the only two airports that meet these criteria. This provides 44 percent of Vermont's population access to an airport with a 5,000-foot long runway that has a precision approach within a 30-minute drive.

The service provided by out-of-state airports that meet the 5,000-foot long runway and precision approach standard will be examined in a subsequent chapter.

BENCHMARK: PERCENT OF VERMONT'S POPULATION AND LAND AREA WITHIN 30 MINUTES OF AIRPORTS IN EACH ROLE CATEGORY

The FAA generally recommends that system airports be within a 30-minute drive time of their intended users. GIS analysis shows that when all 17 system airports are considered, 95 percent of Vermont's population is within a 30-minute drive time of one, or in some cases more system airports. Physically, the 30-minute drive time coverage provided by all of the system airports is approximately 90 percent of Vermont's land area. The GIS analysis was then conducted for the airports in each of the four roles as defined in Chapter 3, to determine the percentage of the population and land area within a 30-minute drive of the different airport functional roles. Airports in a higher role, such as the National Service category, are considered to meet if not exceed the minimum needs of Regional and Local Service airport users. As a result, population and land coverage provided by a less demanding role will also include the compounded coverage provided by any of the higher roles. It should be noted that although an airport in a higher role may provide the minimum facility and service objectives for an airport in a lower role, certain specialty aviation activities such balloon and glider operations are not always practical or warranted at busier, more demanding airports. For each of the associated graphics that deal with airport roles and ground accessibility, coverage provided by an airport in a higher role will be shown screened behind the coverage of the role that is being exhibited.

The three airports that were stratified as National Service are within a 30-minute drive time of just more than half of Vermont's population, providing coverage to 55.3 percent of the people in the State. This coverage represents approximately 31.9 percent of the land area in Vermont. The airports in this role include Burlington

International, which is located in Vermont's largest metropolitan area. **Exhibit 6-4** depicts the coverage provided by the airports currently classified as National Service.

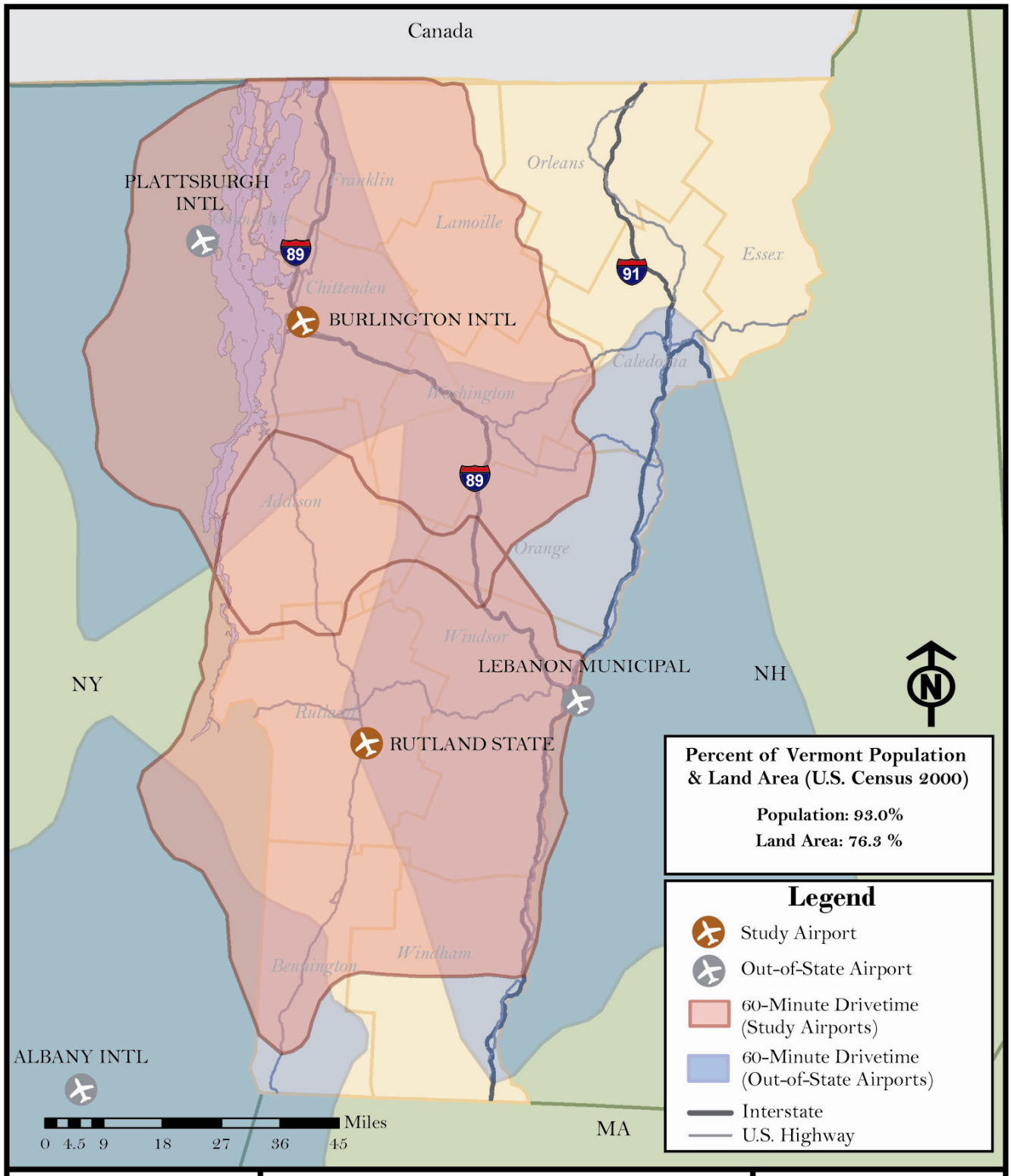
Regional Service airports provide the least amount of coverage in Vermont of the four role categories. **Exhibit 6-5** shows that only 19 percent of Vermont's population lies within a 30-minute drive time of the four Regional Service airports, covering a similar percentage of Vermont's land area at 20.7 percent. Regional Service airports provide some duplicate coverage already provided by National Service airports. When the overall coverage from these two airport roles is combined, approximately 70.5 percent of Vermont's population is within a 30-minute drive time of one of these six airports, providing coverage to almost half of the State's land area.

The four airports in the Local Service role are located within a 30-minute drive time of 26.7 percent of Vermont's population. **Exhibit 6-6** shows that these airports provide most of their coverage along Interstates 89 and 91. The coverage provided by these 30-minute drive times is approximately 30 percent of Vermont's land area. All of the airports in this role except for Middlebury State are located in the northern half of the State. When the coverage provided by these airports is combined with that of the National and Regional Service airports, approximately 88.2 percent of Vermont's population is within a half hour drive by car of a public-use airport. Almost three-fourths of the land mass is located within the overall coverage for these three classifications.

The Specialty Service airports provide the greatest amount of exclusive coverage to both Vermont's population and land area. The 30-minute drive times associated with the seven airports in this role contain 59.5 percent the population and 42.6 percent of the land in Vermont, as depicted in **Exhibit 6-7**. A majority of this coverage is overlapping of airports in the National, Regional, and Local Service roles. Only Post Mills in the east and Mount Snow in the south provide any additional significant coverage not already provided by other airports.

When all coverage provided by the airports in each of the four functional roles is combined, only a small fraction of Vermont's population lies beyond a 30-minute drive time of a public-use airport. **Exhibit 6-8** displays the population of Vermont in a dot-density format with a composite of all 30-minute drive times and significant population centers labeled. As shown, only small areas of low population density are currently not being served by an airport. Most of the gaps in current coverage are along Vermont's borders, primarily in the north and the south. Only one large gap exists in the central region of the State, of which no cities or towns of significant population are located.

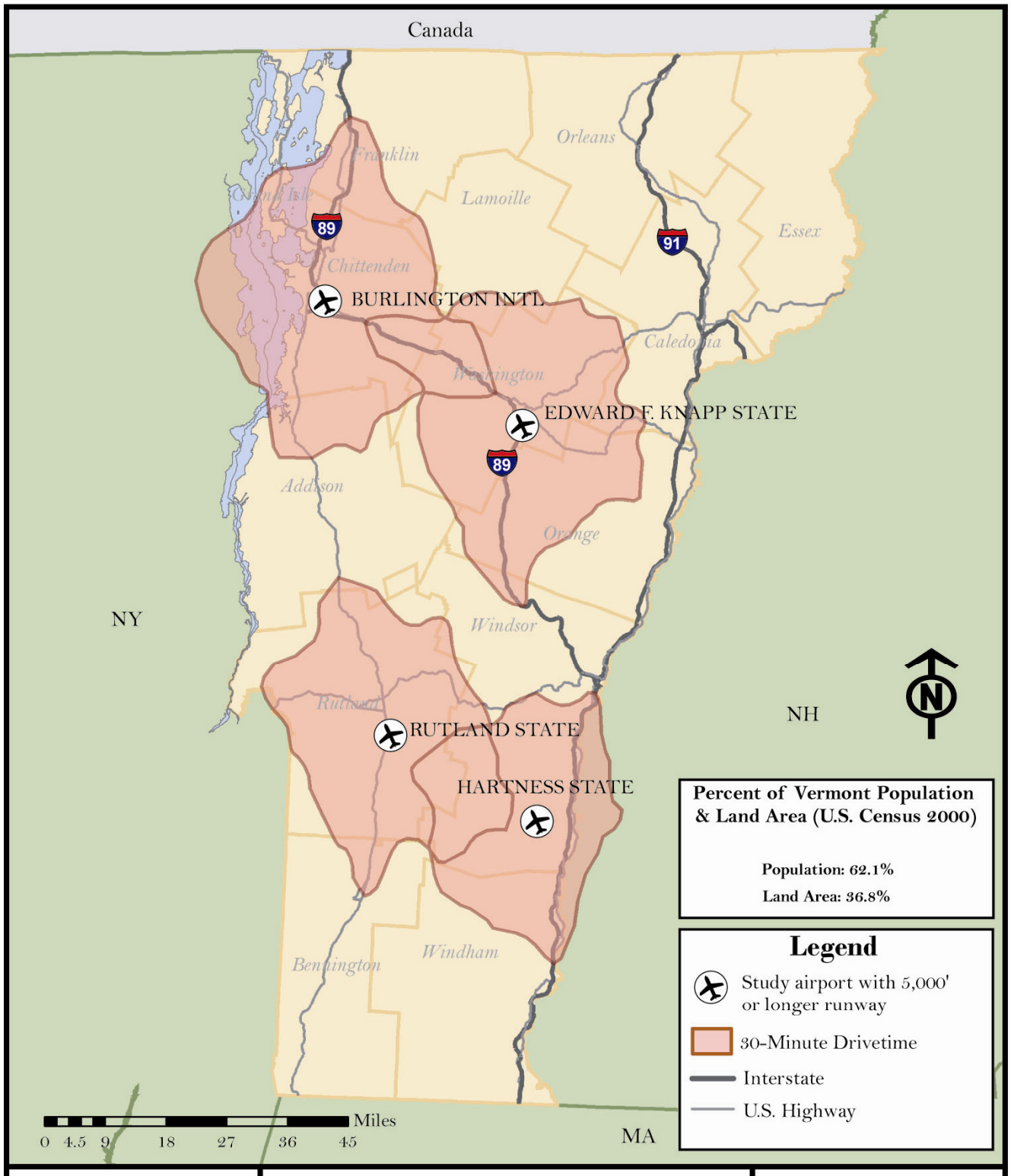
The coverage of land and population that has been measured for each of the previously discussed performance measures only reflects that which is provided by Vermont's public-use airports, with the exception of the accessibility to commercial air service. Out-of-state airports may also provide redundant and is some cases additional coverage to Vermont's inhabitants for the various service levels of airports and type of facilities available. However, for the purpose of this section, it is only important to understand how Vermont's airports are currently performing.



Vermont Airport System Plan

Performance Measure: 60-Minute Drive Time of a Public Use Airport with Commercial Service as of January '06

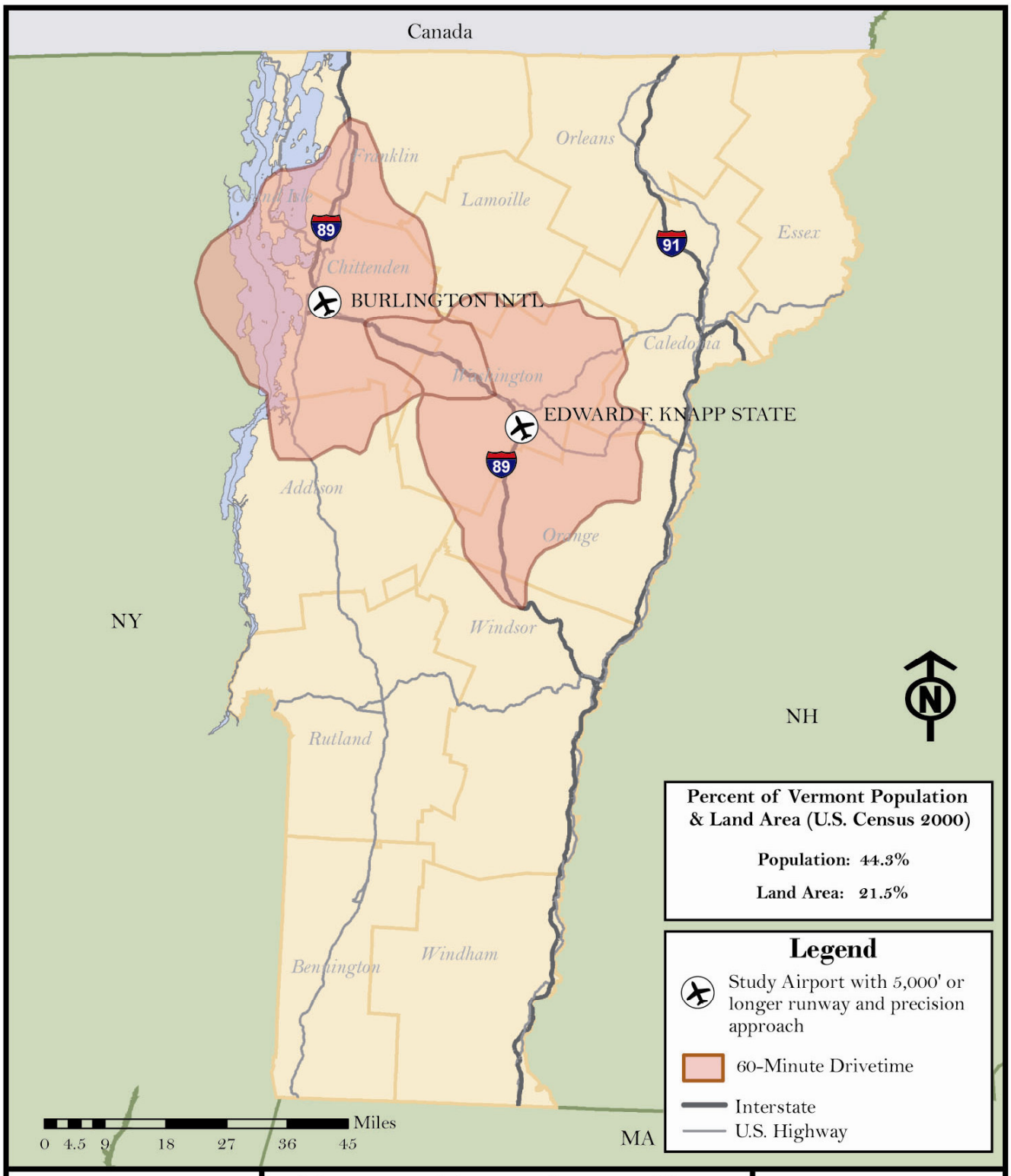
Exhibit 6-1



Vermont Airport System Plan

Performance Measure: 30-Minute Drive Time of a Public Use Airport with a 5,000' Runway as of January '06

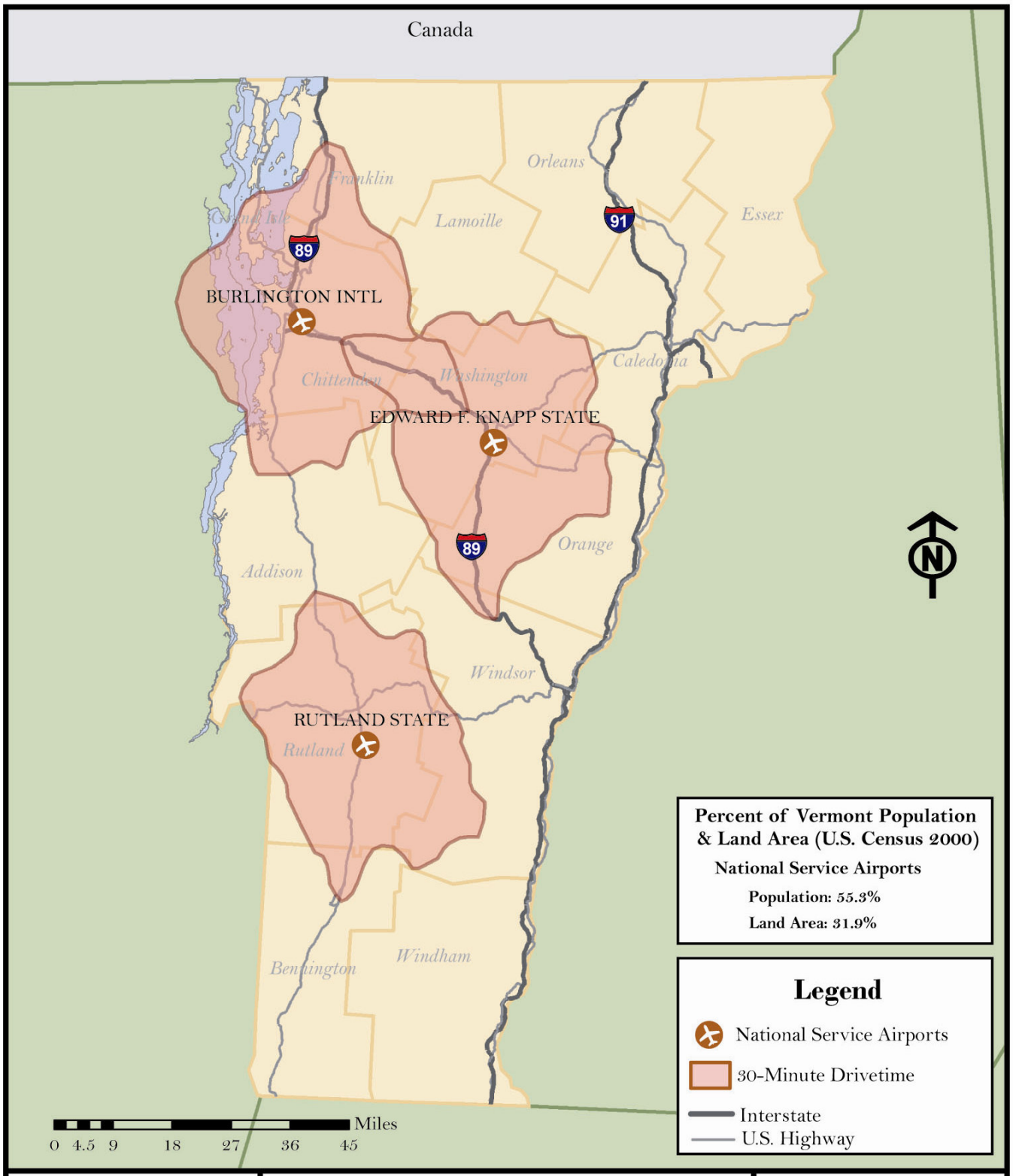
Exhibit 6-2



Vermont Airport System Plan

Performance Measure: 30-Minute Drive Time of a Public Use Airport with a 5,000' or Longer Runway with a Precision Approach as of January 2006

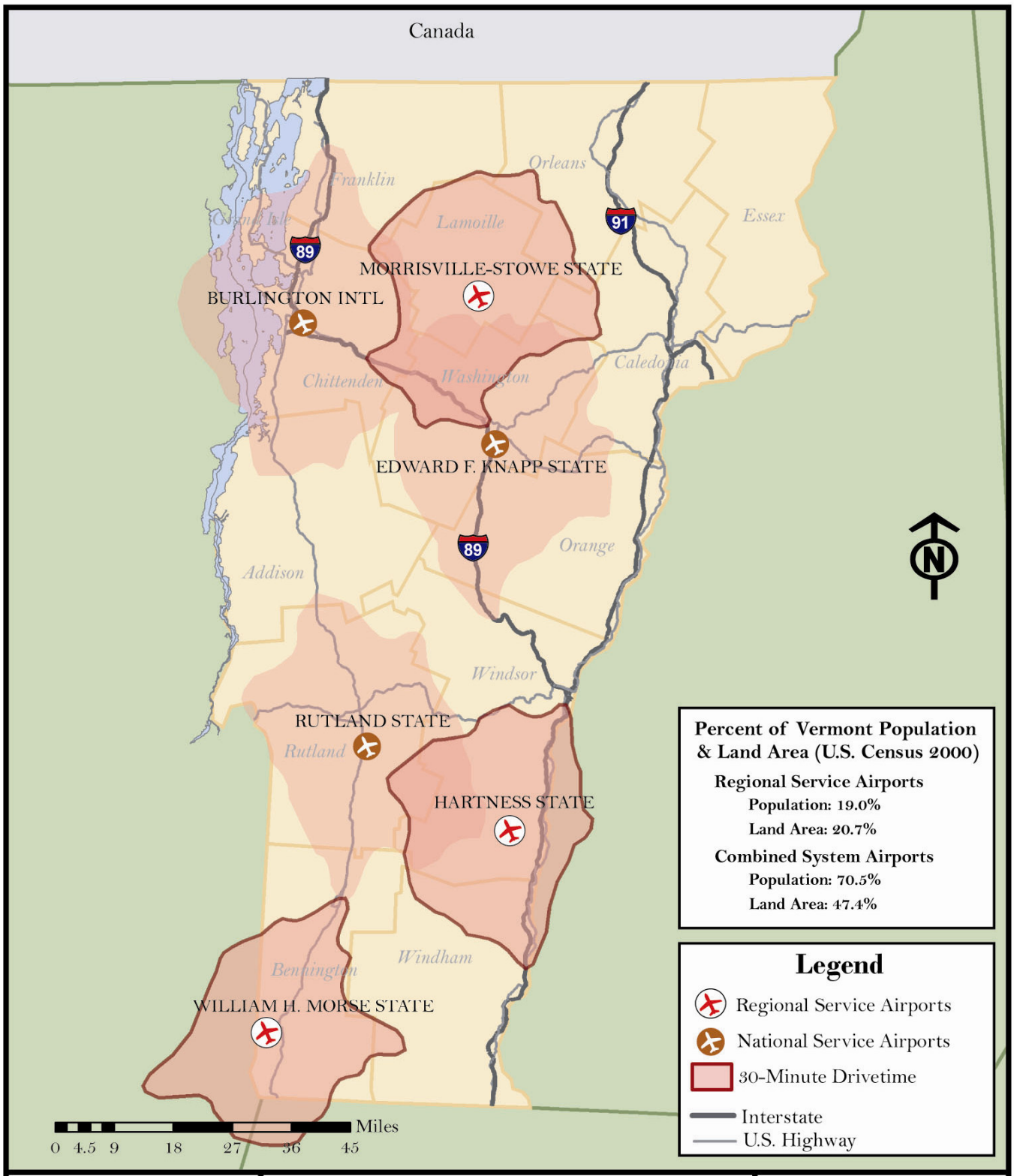
Exhibit 6-3



Vermont Airport System Plan

Performance Measure: National Service Airports and 30-Minute Drive Time Coverage as of January '06

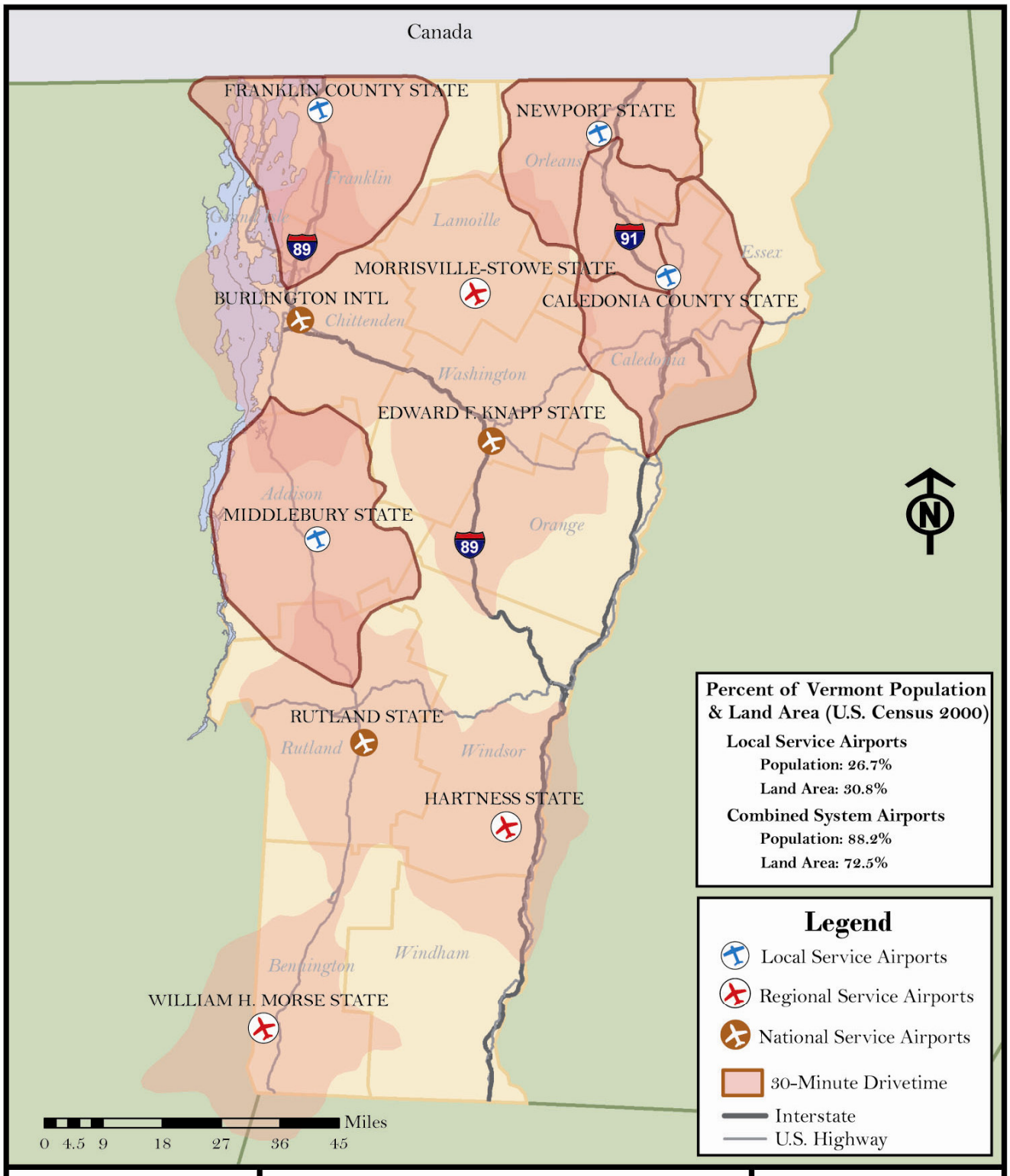
Exhibit 6-4



Vermont Airport System Plan

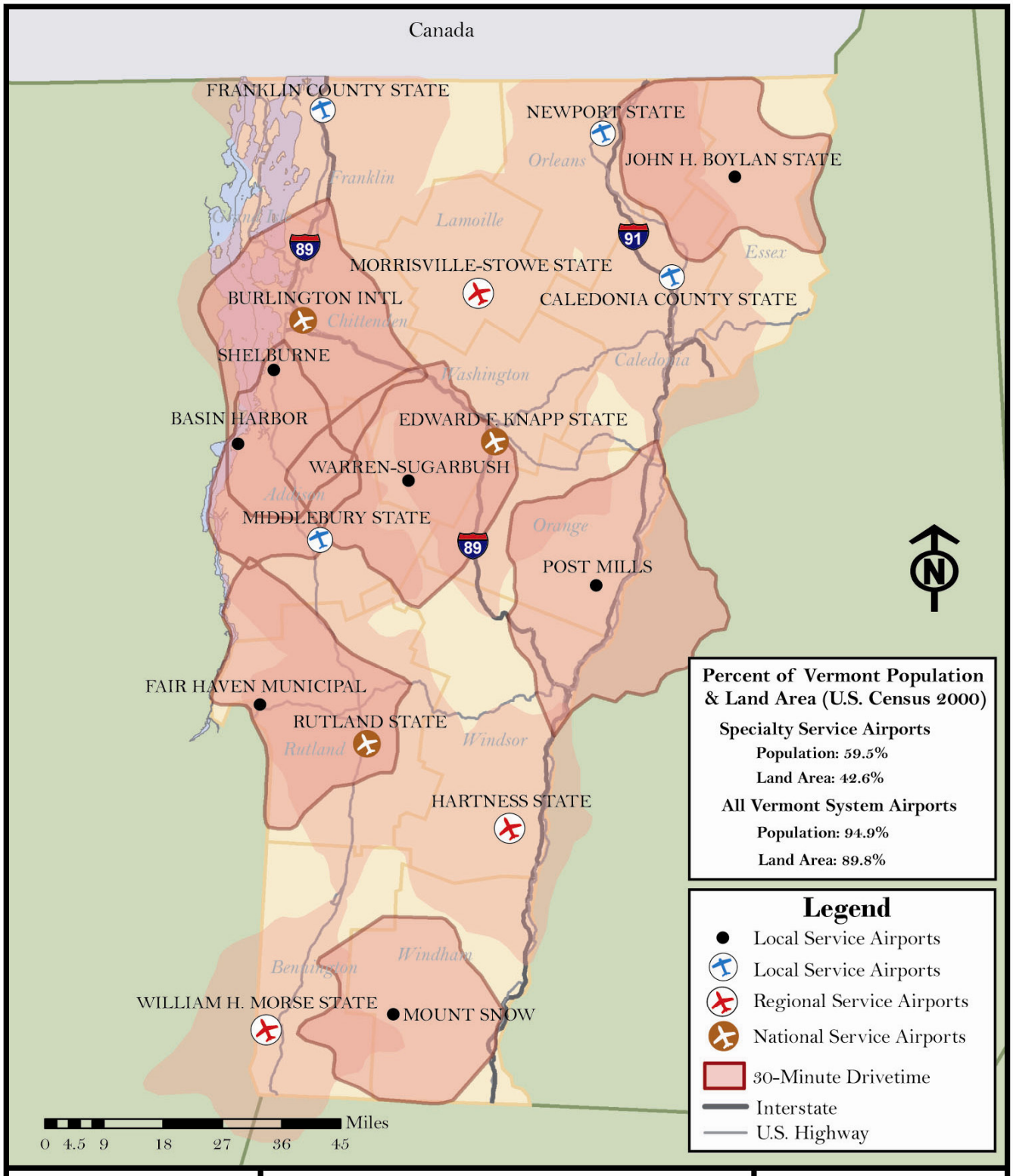
Performance Measure: Regional Service Airports and 30-Minute Drive Time Coverage as of January '06

Exhibit 6-5



Vermont Airport System Plan
Performance Measure: Local Service Airports and 30-Minute Drive Time Coverage as of January '06

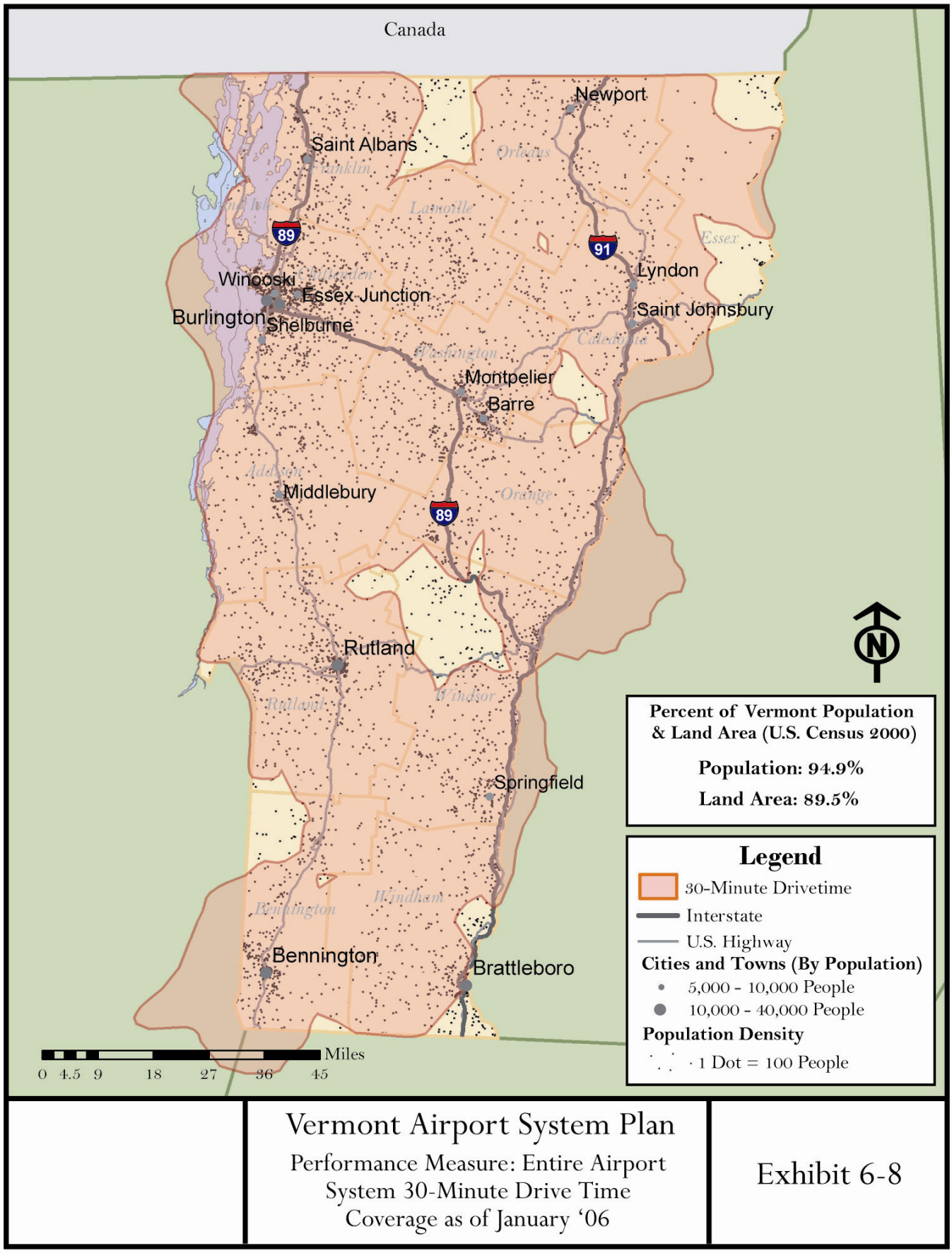
Exhibit 6-6



Vermont Airport System Plan

Performance Measure: Specialty Service Airports and 30-Minute Drive Time Coverage as of January '06

Exhibit 6-7



Vermont Airport System Plan

Performance Measure: Entire Airport System 30-Minute Drive Time Coverage as of January '06

Exhibit 6-8

PERFORMANCE MEASURE: DEVELOPMENT

Development of Vermont's aviation system should seek to preserve and enhance existing airport infrastructure, as appropriate, to maintain the State's access to the national air transportation system. A good airport system should be adequately developed and planned, and provide airside and landside infrastructure and facilities to meet both current and future demand. While landside facilities are typically addressed in an airport master plan, the Vermont Airport System Plan analyzed selected landside facilities to provide a general overview of the system's ability to provide adequate capacity to meet current and future demand.

Specific benchmarks used to evaluate how well the aviation system is meeting the Development performance measure include:

- Percent of population and land area exclusively served (within 30 minutes) by a privately owned airport
- Percent of system airports in each role category meeting minimum facility and service objectives
- Percent of system airports in each role category having a Pavement Condition Index (PCI) of "good" or better
- Percent of system airports in each role category with an Airport Layout Plan (ALP) that has been updated within the last 10 years
- Percent of airports in each category having local airport-related zoning
- Percent of airports in each category that are included in regional land use plans that include airport-compatible land uses in the airport environs

BENCHMARK: PERCENT OF VERMONT'S POPULATION AND LAND AREA EXCLUSIVELY SERVED (WITHIN 30 MINUTES) OF A PRIVATELY OWNED AIRPORT

Privately owned airports are not eligible for FAA Airport Improvement Program (AIP) funds unless they are included in the NPIAS as a designated FAA reliever airport. As a result, improvements and development at many of these airports rests solely with their owner/sponsor but can also be facilitated with the help of State or local funds. In addition, if one or all of these airports were to close or become unusable, significant decreases may occur in overall coverage that is provided by these airports.

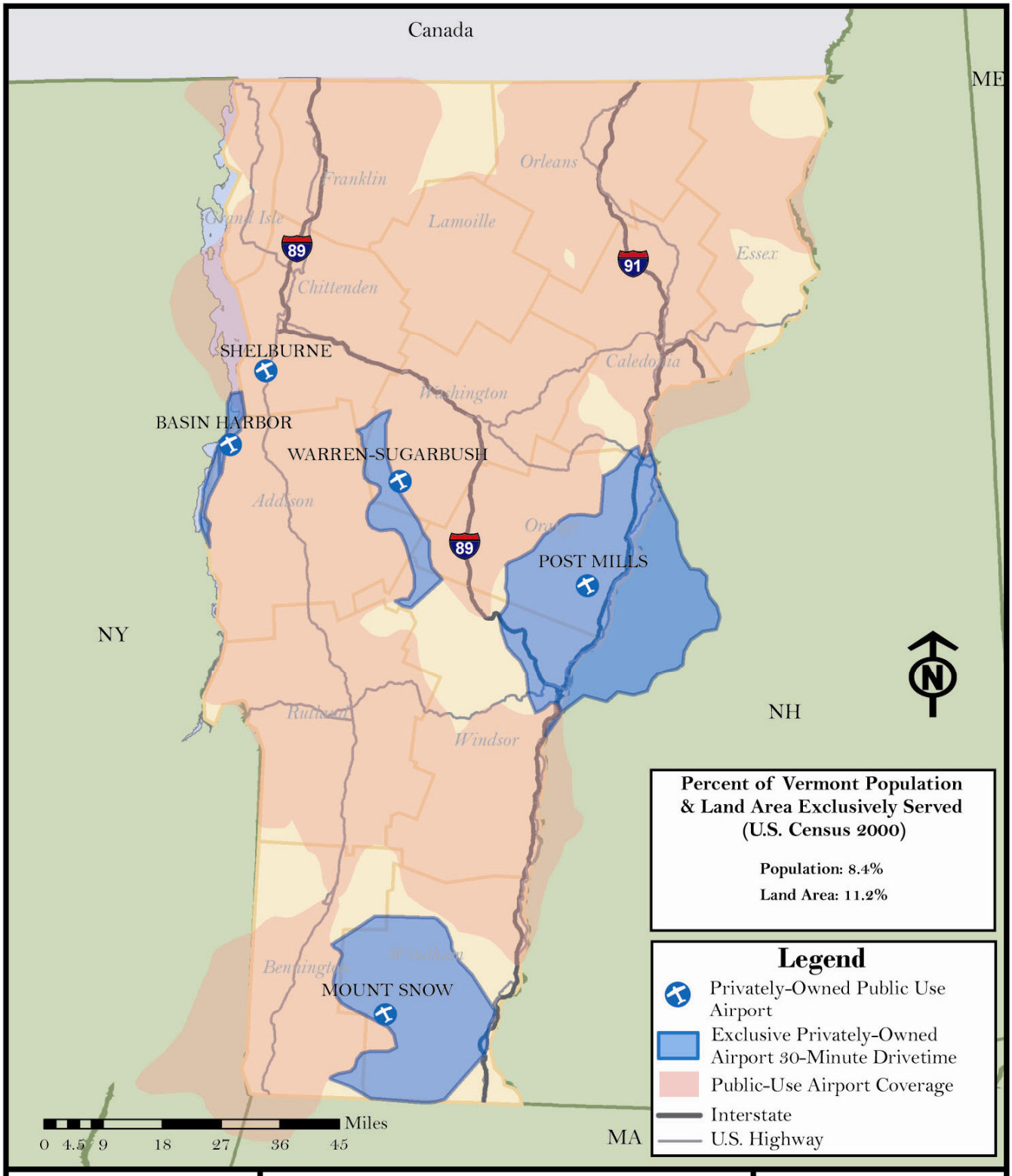
Therefore, it is important to be informed of how many people and how much land in Vermont is exclusively served by privately owned airports.
Vermont has five public-use airports that are privately owned. Most of the coverage provided by these privately owned airports is overlapped by coverage from other State and municipally owned airports. However, approximately 8.4 percent of Vermont's population is exclusively served by the 30-minute drive time coverage provided by these privately owned airports. This same coverage represents approximately 11.2 percent of the land in Vermont. **Exhibit 6-9** depicts the overall 30-minute drive time coverage provided by privately owned airports in addition to highlighting the areas exclusively served by these airports. It should be noted that Post Mills provides the majority of the coverage to the mid-eastern portion of the State, as does Mount Snow in the southern tip of Vermont.

BENCHMARK: PERCENT OF SYSTEM AIRPORTS IN EACH ROLE CATEGORY MEETING MINIMUM FACILITY AND SERVICE OBJECTIVES

As previously noted in Chapter Five, in order for airports to fulfill their roles in the system, certain facility and service objectives should be met. The specific facilities and services needed depend on the role that the airport plays, with more extensive facilities needed at airports that serve larger, more sophisticated aircraft.

It is important to note that the purpose of the System Plan is to provide guidance to VTrans on the airport needs of the State. Facility and service deficiencies identified in this analysis do not necessarily indicate that an airport should or must meet that objective during or beyond the planning period. From an FAA funding standpoint, projects must be included and justified in an airport-specific study in order to be eligible for FAA participation. Projects must be identified in an airport layout plan and appropriate environmental analyses must be prepared prior to consideration for funding. While the System Plan's analysis is considered in the overall context of FAA review, justification for airport-specific projects must be provided to gain FAA approval.

Exhibit 6-10 summarizes compliance within each role category for facility and service objectives as well as the overall system. In the instance where no specific objective has been recommended for a role, the corresponding data has been left blank. A complete, detailed analysis has been performed and is included in **Appendix D**. It should be noted that in some cases none of the airports in a given role may currently meet their recommended objective and it is possible that in the future some may never meet the objective. These facility and services objectives are just that, objectives, and serve as recommendations for the airport system as a whole to strive for when the means for compliance exist.

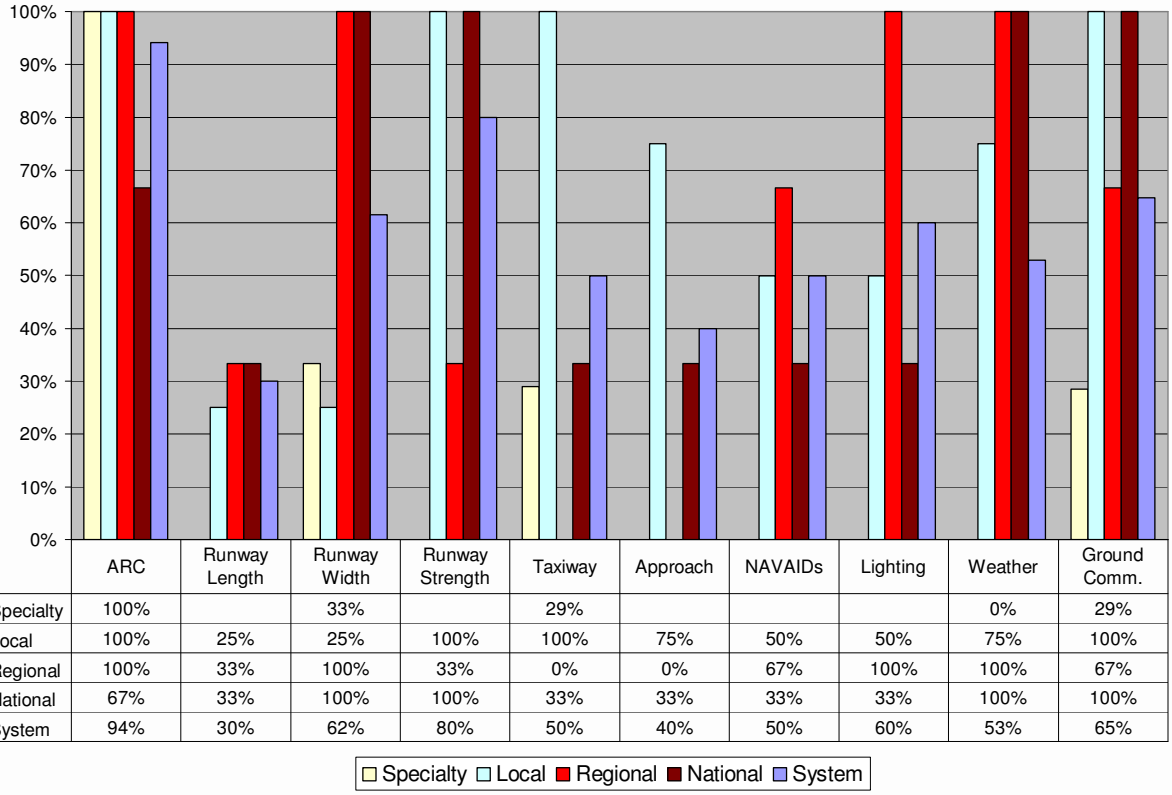


Vermont Airport System Plan

Performance Measure: Privately-Owned Public Use Airports and Exclusive 30-Minute Drive Time Coverage as of January 2'06

Exhibit 6-9

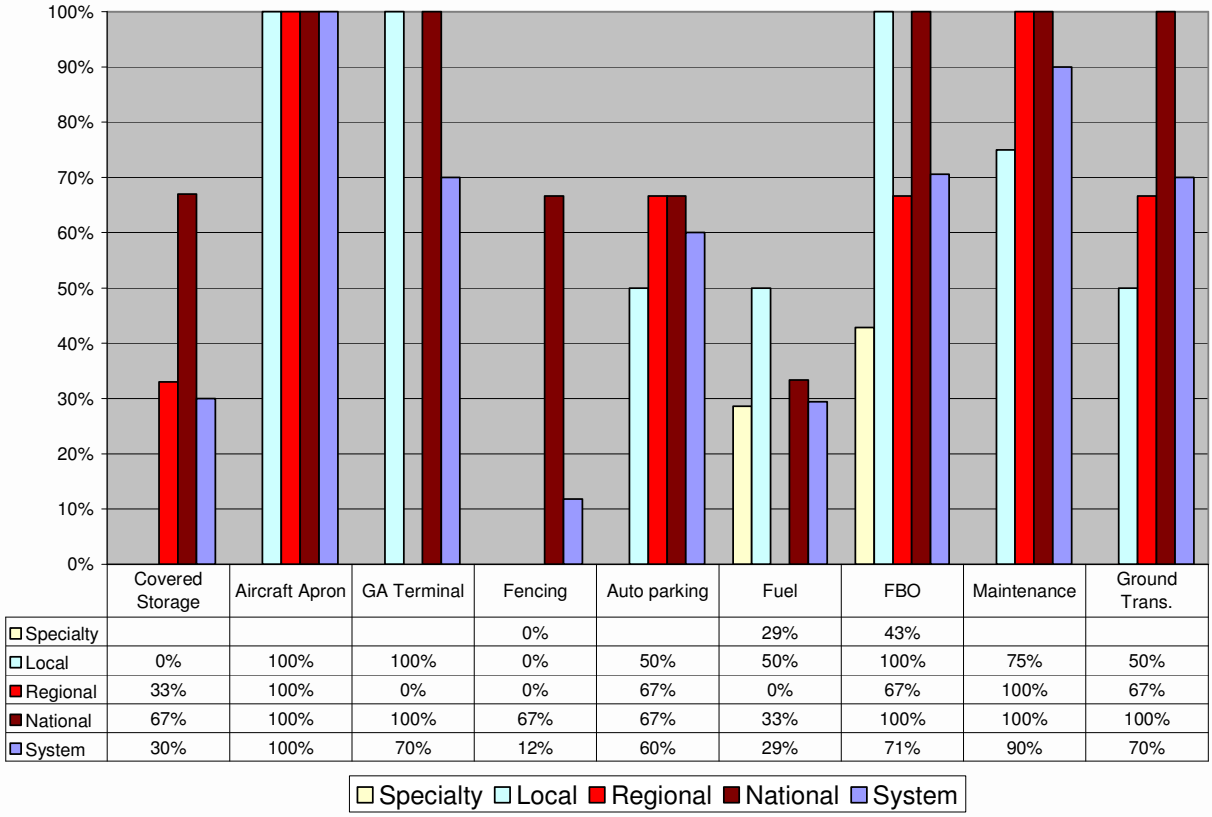
Exhibit 6-10
Performance Measure: Development
Airports Meeting Minimum Facility and Service Objectives



	ARC	Runway Length	Runway Width	Runway Strength	Taxiway	Approach	NAVAIDs	Lighting	Weather	Ground Comm.
Specialty	100%		33%		29%				0%	29%
Local	100%	25%	25%	100%	100%	75%	50%	50%	75%	100%
Regional	100%	33%	100%	33%	0%	0%	67%	100%	100%	67%
National	67%	33%	100%	100%	33%	33%	33%	33%	100%	100%
System	94%	30%	62%	80%	50%	40%	50%	60%	53%	65%

Source: Wilbur Smith Associates

Exhibit 6-10 (continued)
Performance Measure: Development
Airports Meeting Minimum Facility and Service Objectives



	Covered Storage	Aircraft Apron	GA Terminal	Fencing	Auto parking	Fuel	FBO	Maintenance	Ground Trans.
Specialty				0%		29%	43%		
Local	0%	100%	100%	0%	50%	50%	100%	75%	50%
Regional	33%	100%	0%	0%	67%	0%	67%	100%	67%
National	67%	100%	100%	67%	67%	33%	100%	100%	100%
System	30%	100%	70%	12%	60%	29%	71%	90%	70%

Source: Wilbur Smith Associates

BENCHMARK: PERCENT OF SYSTEM AIRPORTS IN EACH ROLE HAVING A PCI OF "GOOD" OR BETTER

Investment in the development and maintenance of paved surfaces at all system airports represents a considerable allocation of funds each year. VTrans has determined that maintaining pavements to a certain standard helps to prevent major, costly reconstruction projects. The review of runway pavement conditions were determined from the FAA 5010 Forms for primary runways only. It should be noted that VTrans completed an Airport Pavement Study in January 2005 that developed PCIs for State-owned airports, as well as a program to manage future pavement projects for State-owned airports.

Most system airports comply with this benchmark as shown in **Table 6-1**.

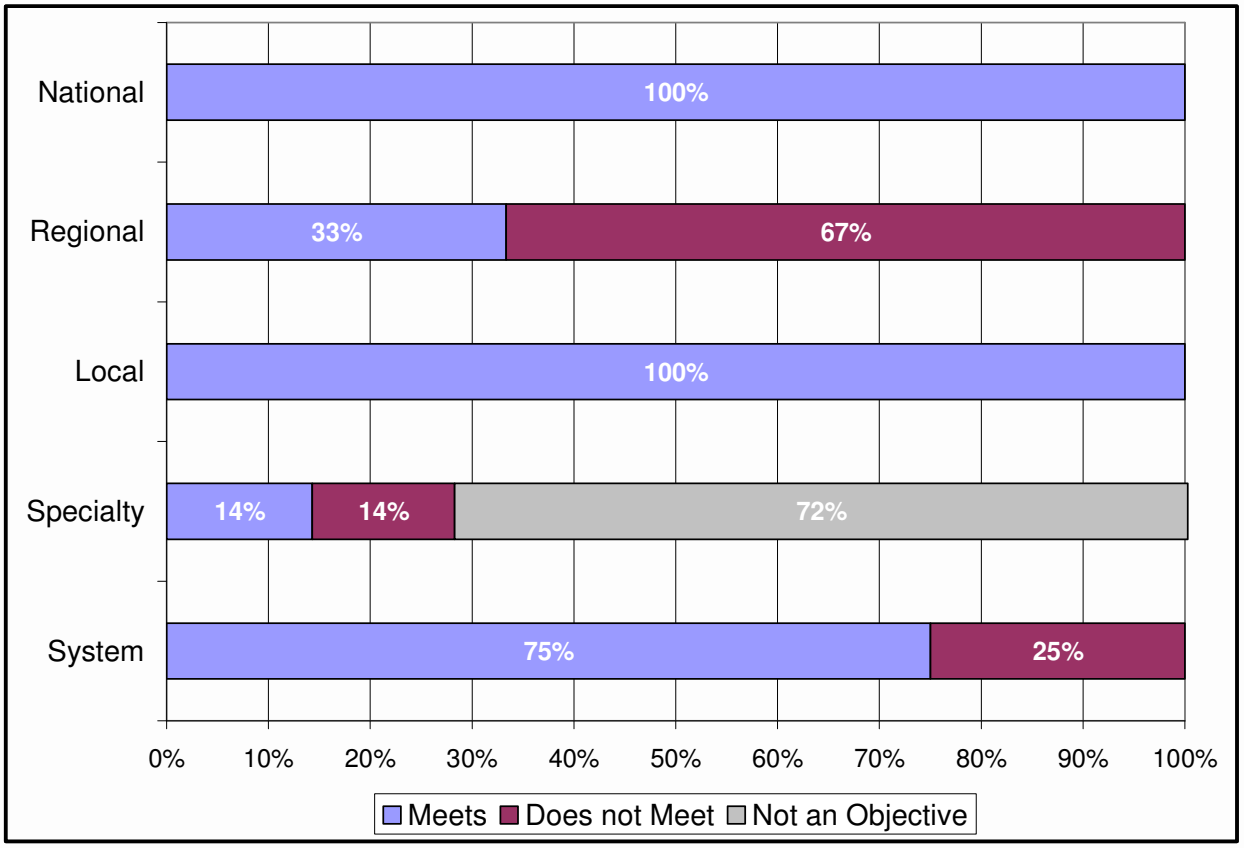
Table 6-1
Performance Measure: Development
Airports Meeting Pavement Condition Objectives

Airport Name	Associated City	Meets	Does Not Meet	N/A*
National Service				
Burlington International	Burlington	X		
Edward F. Knapp State	Barre/Montpelier	X		
Rutland State	Rutland	X		
Regional Service				
Hartness State	Springfield	X		
Morrisville-Stowe State	Morrisville		X	
William H. Morse State	Bennington		X	
Local Service				
Caledonia County State	Lyndonville	X		
Franklin County State	Highgate	X		
Middlebury State	Middlebury	X		
Newport State	Newport	X		
Specialty Service				
Basin Harbor	Vergennes			X
Fair Haven Municipal	Fair Haven			X
John H. Boylan State	Island Pond			X
Mount Snow	West Dover		X	
Post Mills	Post Mills			X
Shelburne	Shelburne			X
Warren-Sugarbush	Warren	X		

Source: Wilbur Smith Associates
*Not Applicable- no objective for airports with turf runways

Exhibit 6-11 shows that 75 percent of all system airports have primary runways that have pavements with at least a "good" rating. Airports with turf runways, which include several in the Specialty Service role, are not required to meet this benchmark. Airports that currently only have a "fair" pavement condition on their primary runway are Morrisville-Stowe, Mount Snow, and William H. Morse State. No runways at public-use airports in Vermont were reported to be in "poor" condition. It is worth noting that as pavement conditions at system airports change from year to year, the ability of system airports to meet the objective set for this benchmark will also change.

Exhibit 6-11
Performance Measure: Development
Airports Meeting Pavement Condition Objectives



Source: Wilbur Smith Associates

BENCHMARK: PERCENT OF SYSTEM AIRPORTS IN EACH ROLE HAVING AN AIRPORT LAYOUT PLAN (ALP) UPDATED IN THE LAST 10 YEARS

Having current planning documents is imperative to any major development and expansion of an aviation facility. Consequently, this characteristic is very important to the development and optimization of Vermont's aviation system. All airports in the Vermont system were evaluated for the currency of their Airport Layout Plans (ALPs) as displayed in **Table 6-2**.

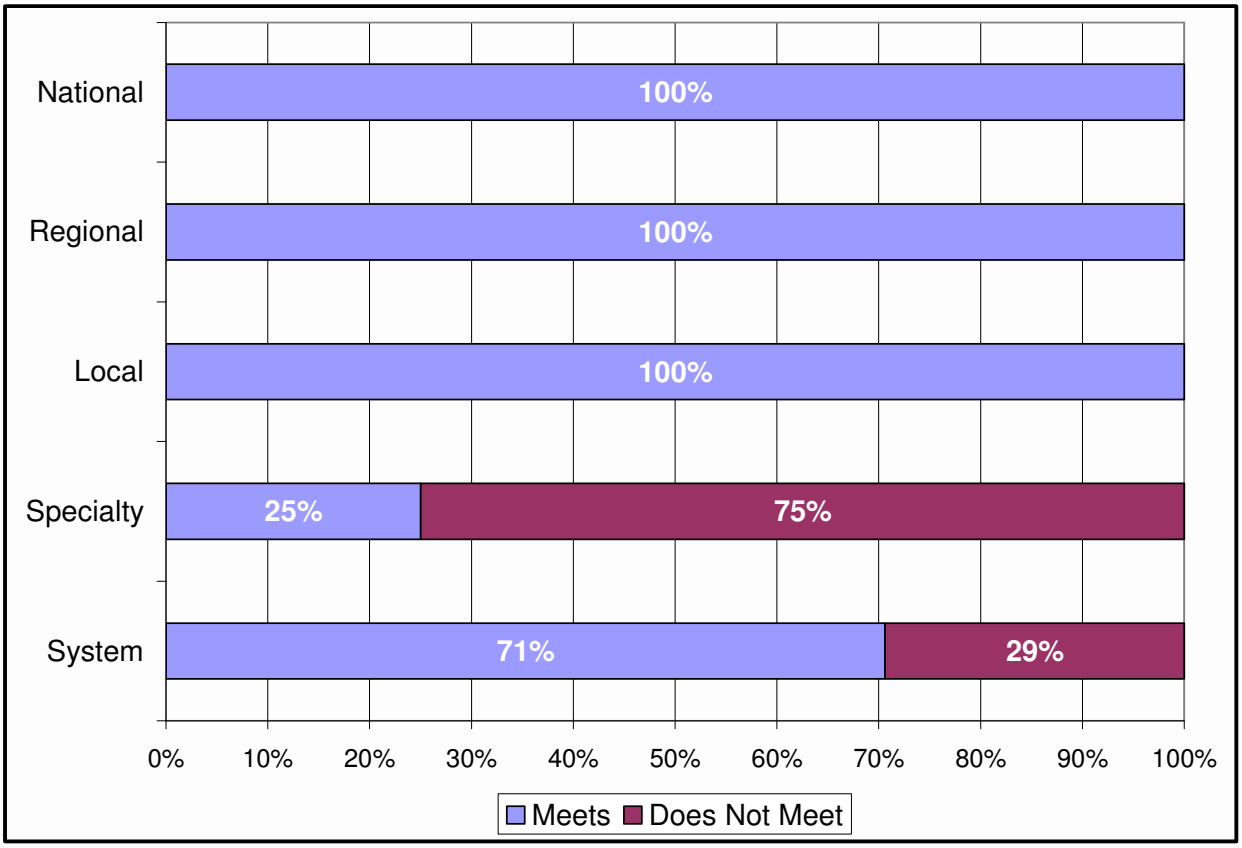
Table 6-2
Performance Measure: Development
Airports Having an ALP Updated in Past 10 Years

Airport Name	Associated City	Meets	Does Not Meet
National Service			
Burlington International	Burlington	X	
Edward F. Knapp State	Barre/Montpelier	X	
Rutland State	Rutland	X	
Regional Service			
Hartness State	Springfield	X	
Morrisville-Stowe State	Morrisville	X	
William H. Morse State	Bennington	X	
Local Service			
Caledonia County State	Lyndonville	X	
Franklin County State	Highgate	X	
Middlebury State	Middlebury	X	
Newport State	Newport	X	
Specialty Service			
Basin Harbor	Vergennes		X
Fair Haven Municipal	Fair Haven	X	
John H. Boylan State	Island Pond	X	
Mount Snow	West Dover		X
Post Mills	Post Mills		X
Shelburne	Shelburne		X
Warren-Sugarbush	Warren		X

Source: Wilbur Smith Associates

Of the 17 system airports, only five airports in the Specialty Service role have not had an ALP updated in the past 10 years. All of the airports in the National, Regional, and Local Service role (100 percent) have either updated their ALPs in the past 10 years or are currently in the process of updating, as depicted in **Exhibit 6-12**.

Exhibit 6-12
Performance Measure: Development
Airports Having an ALP Updated in Past 10 Years



Source: Wilbur Smith Associates

BENCHMARK: PERCENT OF SYSTEM AIRPORTS IN EACH ROLE HAVING LOCAL AIRPORT-RELATED ZONING

The long-term viability of airports in most systems can be threatened or endangered by encroachment from land uses or activities that are incompatible with an airport and its operation. For many airports, their zone of influence and potential impact extend to property that is not actually owned or controlled by the airport. In these instances, the airport must work with surrounding municipalities to implement land use controls or zoning that recognize the presence of the airport and its potential areas of impact.

Meeting this particular benchmark for the system is often times beyond an airport's control, as actions to implement zoning within the influence zones of each airport are at the discretion of the affected municipality or municipalities. Information was obtained from Vermont's Regional Planning Commissions related to airports and

municipalities that have taken steps to consider some type of appropriate zoning with their local municipalities; the results from this analysis are shown in **Table 6-3.**

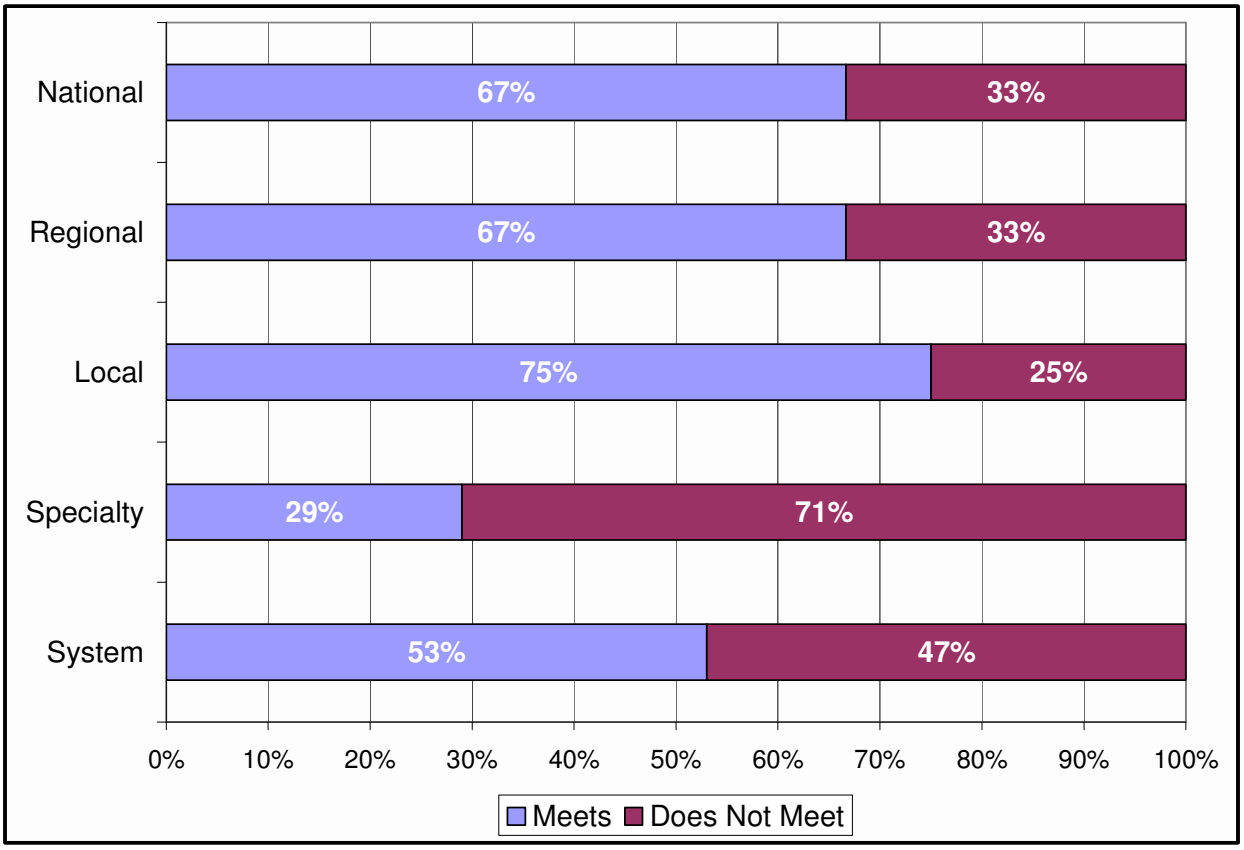
Table 6-3
Performance Measure: Development
Airports Having Local Airport-Related Zoning

Airport Name	Associated City	Meets	Does Not Meet
National Service			
Burlington International	Burlington	X	
Edward F. Knapp State	Barre/Montpelier		X
Rutland State	Rutland	X	
Regional Service			
Hartness State	Springfield		X
Morrisville-Stowe State	Morrisville	X	
William H. Morse State	Bennington	X	
Local Service			
Caledonia County State	Lyndonville	X	
Franklin County State	Highgate	X	
Middlebury State	Middlebury	X	
Newport State	Newport		X
Specialty Service			
Basin Harbor	Vergennes		X
Fair Haven Municipal	Fair Haven		X
John H. Boylan State	Island Pond		X
Mount Snow	West Dover	X	
Post Mills	Post Mills		X
Shelburne	Shelburne		X
Warren-Sugarbush	Warren	X	

Source: Wilbur Smith Associates

Overall, 53 percent of the system airports have some sort of local airport-related zoning, as shown in **Exhibit 6-13**. Sixty-seven percent of the National and Regional Service airports have local airport-related zoning, while 75 percent of Local Service airports meet this objective. Warren-Sugarbush and Mount Snow are the only airports in the Specialty Service role to have airport-related zoning.

Exhibit 6-13
Performance Measure: Development
Airports Having Local Airport-Related Zoning



Source: Wilbur Smith Associates

BENCHMARK: PERCENT OF SYSTEM AIRPORTS IN EACH ROLE THAT ARE INCLUDED IN REGIONAL LAND USE PLANS THAT INCLUDE AIRPORT-COMPATIBLE LAND USES IN THE AIRPORT ENVIRONS

As mentioned previously, the long-term viability of airports can be threatened or endangered by encroachment from land uses or activities that are incompatible with an airport and its operation. As a result, the Vermont Airport System was analyzed to determine which airports are included in regional land use plans that include airport-compatible uses within the airport environs. In some instances, the area surrounding an airport may be classified by a regional land use plan as compatible although the actual use upon the property may be considered non-compatible. **Table 6-4** depicts which airports meet this objective.

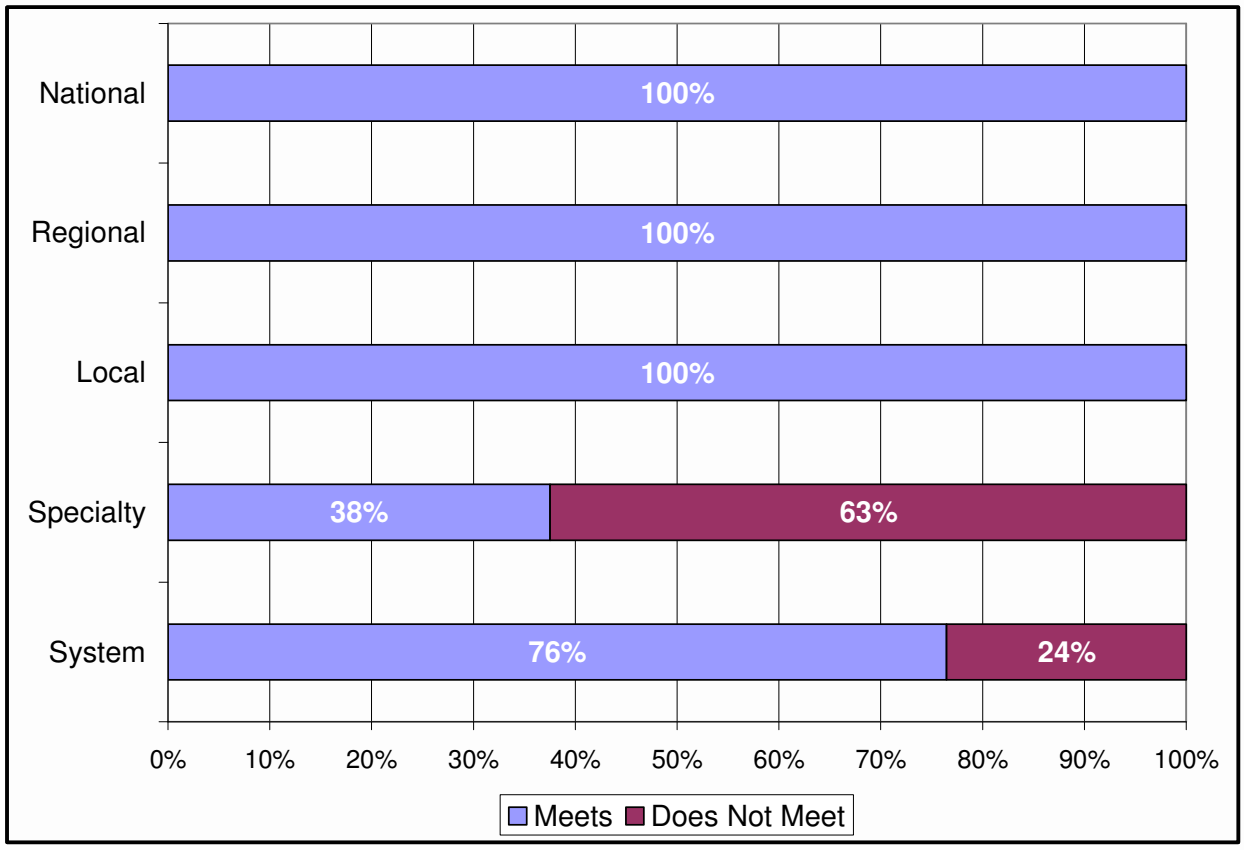
Table 6-4
Performance Measure: Development
Airports Included in Regional Land Use Plans with Compatible Land Uses in the Airport Environs*

Airport Name	Associated City	Meets	Does Not Meet
National Service			
Burlington International	Burlington	X	
Edward F. Knapp State	Barre/Montpelier	X	
Rutland State	Rutland	X	
Regional Service			
Hartness State	Springfield	X	
Morrisville-Stowe State	Morrisville	X	
William H. Morse State	Bennington	X	
Local Service			
Caledonia County State	Lyndonville	X	
Franklin County State	Highgate	X	
Middlebury State	Middlebury	X	
Newport State	Newport	X	
Specialty Service			
Basin Harbor	Vergennes		X
Fair Haven Municipal	Fair Haven	X	
John H. Boylan State	Island Pond	X	
Mount Snow	West Dover		X
Post Mills	Post Mills		X
Shelburne	Shelburne		X
Warren-Sugarbush	Warren	X	

Source: Wilbur Smith Associates
* According to planning documents, does not reflect true land coverage

All of the airports in the National, Regional, and Local Service roles meet this objective. Only 38 percent of the airports in the Specialty Service role are recognized in a regional land use plan that includes compatible land uses in the airport environs, as shown in **Exhibit 6-14**. Overall, 76 percent the study airports meet this objective.

Exhibit 6-14
Performance Measure: Development
Airports Included in Regional Land Use Plans with Compatible Land Uses in the Airport Environs*



Source: Wilbur Smith Associates
* According to planning documents, does not reflect true land coverage

PERFORMANCE MEASURE: SAFETY AND SECURITY

A third goal established by the Vermont Airport System Plan is to provide a safe and secure system of airports. As part of the safety and security performance measure, the number of system airports that meet objectives related to addressing safety and security concerns is evaluated. Safety and security objectives include those established by the FAA, VTrans, and the Transportation Security Administration (TSA). VTrans is currently undergoing an evaluation of the safety and security of the public-use airports in Vermont. As a result, it was determined by VTrans and the consultant that the Vermont Airport System could not be measured for compliance with these standards at the time of this study. Conclusively, it was recommended that the consultant identify specific objectives that VTrans can use for measuring the safety and security of the Airport System in the future.

To evaluate the adequacy of Vermont's Airport System relative to applicable safety and security measures, the following benchmarks were originally established:

- Percent of airports meeting applicable FAA airport design standards
- Percent of airports meeting applicable VTrans or TSA security-related recommendations

The following sections identify what should be measured in order to evaluate the safety and security of a state airport system.

BENCHMARK: PERCENT OF SYSTEM AIRPORTS IN EACH ROLE THAT MEET APPLICABLE FAA AIRPORT DESIGN STANDARDS

Airport design standards are established by the FAA to ensure that an airport is safe and efficient. Typically, any airport that has a proposed airfield improvement that is eligible for federal funding undergoes a detailed analysis by the FAA to ensure that all safety areas of the airfield are met before funding is approved. Vermont's Airport System should strive towards being in compliance with all FAA established safety areas, which include the Runway Safety Area (RSA), Runway Protection Zone (RPZ), and appropriate runway-taxiway separations.

The dimensions for the RSA are determined by the individual airport reference code (ARC) of each airport. ARCs were discussed as part of Chapter 3. The RSA is designed to promote and increase airport safety, and is defined as the surface surrounding the runway which is prepared or suitable for reducing the risk of damage to aircraft in the event of an undershoot or overshoot on the runway. The RSA, in accordance with FAA standards, should be free and clear of any obstructions; the RSA should also be graded, but not necessarily paved.

The dimensions of the RSA vary based on applicable design standards of ARC and approach visibility minimums for the respective runway. The FAA has set standards for both the length and width of the RSA for each Airport Reference Code, as per FAA AC 150/5300-13, change 10, *Airport Design*. Each airport in the Vermont Airport System should be evaluated to determine if existing RSA lengths and widths meet the standards based on each airport's current ARC.

The FAA has established standards for a number of surfaces around an airport to be free and clear of all or certain types of development. In particular, the FAA has standards that are applicable to the areas at the end of each active runway end that aircraft make their approach and departures over. These areas are known as Runway Protection Zones, and should be free of any obstructions to ensure a clear and safe

approach can be made to a specific runway end. In addition, Federal Aviation Regulation (FAR) Part 77 surfaces, which detail the transitional surfaces that extend out from a runway centerline and should be free of objects that violate applicable height restrictions, must also be considered. Vermont's public-use airports should be evaluated to ensure that the RPZ for each active runway end in the State is free and clear of any obstructions and that the Part 77 surfaces meet standards.

Lastly, each airport's ARC specifies criteria for the separation of airfield components. One of the most important is the separation of the runway-taxiway system. Vermont's airports should be evaluated to determine if each airport's runway and its associated taxiway are separated by the appropriate distance specified by the FAA AC 150/5300-13, change 10, *Airport Design* manual.

BENCHMARK: PERCENT OF SYSTEM AIRPORTS IN EACH ROLE THAT MEET APPLICABLE VTRANS OR TSA SECURITY-RELATED RECOMMENDATIONS

As mentioned earlier in this section, VTrans is currently examining the security at the various public-use airports in the State. This will in turn allow VTrans to establish its own objectives and goals that would form a security policy plan for the system airports to abide. Objectives that VTrans may take into consideration when evaluating the security of the overall system include the percent of airports that have a written emergency response plan, wildlife management plan, and airports that have fuel farms that comply with the National Fire Protection Agency (NFPA). While VTrans may issue their own security and safety guidelines, the Transportation Security Administration (TSA) has specific recommendations for various types of general aviation airports.

The events of September 11th, 2001, had a profound impact on the aviation industry, with repercussions felt in both commercial and general aviation. The federal government initiated rapid changes to transportation security, creating a new federal agency, the Transportation Security Administration (TSA). The TSA released its *Security Guidelines for General Aviation Airports* in May 2004. These guidelines were produced from recommendations made by the Aviation Security Advisory Committee (ASAC) Working Group, which worked with FAA and TSA officials. These guidelines provide airport owners, operators, sponsors, and other entities charged with oversight of general aviation airports a set of federally endorsed security enhancements. The guidance recognizes, and in fact emphasizes, that every airport is different, and that security enhancements that are appropriate and needed at one airport may not be warranted or even needed at another. It should be noted that these security suggestions are not applicable to airports requiring a TSA-approved security plan (those required to comply with 49 CFR 1542, *Airport Security*). The Vermont Airport System should be evaluated in the future to determine the

appropriate level of security needed at each airport, and if each airport meets its specific objectives.

SUMMARY

The analysis contained in this chapter summarizes the existing performance of Vermont's airport system based on the roles that were initially identified for each of the 17 airports. This analysis can be considered a "report card" on existing activities. The next chapter analyzes future needs of Vermont's airport system, including the identification of projects that are needed for the system to perform at its recommended level. This analysis provides the baseline for developing system recommendations and quantifying future system performance improvements.